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NHTSA-99-5045-7
NHTSA-99-6550-16

BOSCH BRAKING SYSTEMS CORPORATION

BOSCH

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January 24, 2002

Administrator
National Highway Traffic Safety Administration
400 Seventh Street, SW
Washington, DC 20590

Re: 49 CFR Part 571 (Docket No 99-5045) and 49 CFR Part 571 (Docket No. 99-6550)

Docket Administrator;

This letter is in response to the National Highway Traffic Safety Administration's request for reconsideration regarding the rulemaking in 49 CFR Part 571 Docket No. 99-5045. In the subject Docket, TMA was requesting changes in the test sequence concerning unloaded and loaded straight-line stops immediately following the braking-in-a-curve test. In the final ruling this proposal was denied by NHTSA.

In a different rulemaking proposal, 49 CFR Part 571 Docket 99-6550, NHTSA requested inputs concerning the addition of the braking-in-a-curve test to FMVSS-105 and FMVSS-121 for single unit trucks and buses with GVWRs over 10,000 lbs with either hydraulic or air brakes. In this docket (99-6550), one of the Bosch recommendations was a change in test sequence as covered in our February 2000 letter to NHTSA (copy attached). These were for a slightly different test sequence than proposed by TMA and also for reasons slightly different than by TMA. However, because this topic of test sequence with regards to braking-in-a-curve test is contained in different controlling Dockets (99-6550 and 99-5045), the original Bosch response was apparently never considered under Docket 99-5045. Because these topics are related, Bosch feels that our original response should have been considered in the 99-5045 final rulemaking decision because the precedent set will have a direct impact on the final rulemaking for Docket 99-6550. It is for this reason that Bosch is requesting NHTSA to reconsider it's decision in Docket 99-5045 and refrain from final implementation of the ruling until the final rulemaking is made for Docket 99-6550.

Please direct any questions to:

Doug Zavodny
401 North Bendix Drive
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574-237-2229 or facsimile 574-237-2210

Very Truly Yours,

Dr Sigmar Micks
Vice President of Engineering
Bosch Automotive Chassis, a division of Robert Bosch Corporation

Attachment: 1 (2 pages)

BOSCH BRAKING SYSTEMS CORPORATION

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February 22, 2000

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National Highway Traffic Safety Administration
Docket Management, Room PL-401
400 Seventh Street, SW
Washington, D. C. 20590

Re: 49 CFR Part 571 (Docket No. 99-6550)
Federal Motor Vehicle Safety Standards: Heavy Vehicle Antilock Brake System (ABS) Performance Requirement

Docket Management:

This letter is in response to the National Highway Traffic Safety Administrations request for input concerning the proposed addition of a "braking-in-a-curve" test to FMVSS-105 and FMVSS-121. This proposal is supposed to be applicable to all hydraulic and air-braked single-unit trucks and buses with GVWRs over 10,000 lbs.

Bosch Braking Systems has reviewed the proposal, and is in fundamental agreement with it, except for the "Test Sequence". NHTSA proposes that the braking-in-a-curve test for air-braked single-unit trucks and buses be conducted immediately after the burnish procedure as indicated in Table-1 of FMVSS-121, with the loaded tests followed by the unloaded tests. Additionally, NHTSA proposes that this test for hydraulic-braked single unit trucks and buses be conducted immediately after the post-burnish brake adjustment in FMVSS-105 S7.4.2.2, with the loaded tests followed by the unloaded tests. Bosch Braking Systems would like to take exception to this sequence and instead propose that the braking-in-a-curve test be run immediately following the loaded parking test, with the loaded tests followed by the unloaded tests. This sequence would be applicable for both air-braked and hydraulic-braked vehicles per FMVSS-121 and FMVSS-105, respectively.

Bosch is basing this exception on several factors, the first being the additional cost and manpower impact of conducting one additional sequence of unloading and reloading of the test weights just to perform the proposed braking-in-a-curve test. As stated by NHTSA in section "J. Loaded Test Weight", ".....there are many configurations of bodies and equipment used in the completion of single unit trucks....". Because of the unique mix of body styles there is no one standard in where and how the weights are to be positioned to achieve the loaded weight requirements. NHTSA discusses this topic in section "J. Loaded Test Weight" where it concludes that "..... We believe that it would not be possible to specify a loading scheme that would be applicable to all single unit trucks and buses". For some body styles, it is possible to use 1000 lb. weight blocks either attached to a load frame or vehicle underbody. A typical loading or unloading for these body styles requires the services of 2 technicians and a forklift. However other body styles, such as buses, require that 25 lb. and 50 lb. test weight bags be positioned on the seats, on the floor, and in overhead storage compartments to meet the prescribed vehicle loading. A typical loading or unloading for these body styles must be done manually.

Depending on the body style, some tests require that up to 15,000 lbs. of ballast be loaded onto the vehicle. For those vehicles that can accommodate the test weight via 1000 lb. test blocks, the incremental time to either unload or load test weights is approximately 1 man-hour each, or a total of 2 man-hours. If the body style is unique, such as a bus that requires manual unload and load of test weights, the

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incremental time for each is estimated at 7 man-hours, or 14 man-hours total. This later scenario presents several situations which we believe NHTSA did not consider with regard to the proposed test sequence.

- Since the unloading or loading is conducted manually, the well-being of the technicians must be considered to insure a safe working environment is maintained.

- Bosch will be impacted as both a user and provider of this proposed test. We are a provider in that as an OE brake supplier we will have to bear the costs associated with the test to certify our brake products. NHTSA has estimated the cost impacts of the added tests, but it is unclear if they reflect an extra manual unload and load sequence. Bosch is also a supplier because it sells brake testing services at our vehicle proving grounds. In addition to the costs of the extra man-hours, which will be likely be passed on to the customer as assumed by NHTSA, there is a net loss in the total number of tests that can be run over the course of a year. This impact will not only affect Bosch's overall test capacity, but also any test facility where this test will be run.

Aside from the total cost impact to run the proposed test, NHTSA discussed that it wanted to run the braking-in-a-curve test early in the overall procedure "...to minimize ABS performance variability that might occur after tires are subjected to high-speed stopping distance tests on a high coefficient of friction surface." However in the tests conducted by NHTSA, the variability associated with when the braking-in-a-curve test is run was not explored. If the braking-in-a-curve test is run as proposed by Bosch, we feel that the ability to pass this test would not be adversely affected. Since all vehicles to be tested will be equipped with ABS, the impact on the tires for a few added high-speed stops should be minimal if the ABS is functioning properly.

Again considering the unique body styles that are attached to single-unit medium and heavy vehicles, test driver ability and safety to test the vehicles must be considered. The later in either the FMVSS-121 or FMVSS-105 overall test sequence that the braking-in-a-curve test is run, the more familiar with the handling of these vehicles the test driver will be allowing them to accurately run the braking-in-a-curve test in a safe manner.

For the reasons stated above, Bosch Braking Systems would like NHTSA to reconsider the sequence for the braking-in-a-curve test. As stated previously, Bosch is proposing that the braking-in-a-curve test for single-unit trucks and buses be run immediately following the loaded parking test, with the loaded tests followed by the unloaded tests. This sequence would be applicable for both air-braked and hydraulic-braked vehicles per FMVSS-121 and FMVSS-105, respectively.

Please direct any questions with regards to the above to:

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Very truly yours,

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Vice President of Engineering
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